

## WHAT MAKES A UNIVERSITY SUCCESSFUL FROM THE PERSPECTIVE OF TEACHING AND STUDENT LEARNING?

Jan Vermunt

In this contribution I would like to focus on the quality of student learning at university, the pedagogy and quality of university teaching, and the relationship between those two components of a successful university. The pedagogy and quality of university teaching are mostly taken for granted. The dominant view is that good researchers are good teachers almost by definition, a view with which I profoundly disagree.

A universal aim of university education is to develop skills of critical, analytical and independent thinking in students, and to enable them to apply these skills to solve problems in their field of expertise. However, universities differ greatly in the degree to which they achieve this aim and in what kind of learning they foster in students. For example, at the University of Cambridge we place a strong emphasis on students' critical engagement with the literature. In our Masters programmes we have an enrolment of students from all over the world, and many of them have learned previously only to a limited degree to critically engage with scientific resources.

Moreover, students should become able to continue acquiring, producing and utilizing new knowledge after their graduation for the rest of their professional lives. Acquiring new knowledge refers to, among other things, preparing for the lifelong learning society that the Minister of Education was referring to in his speech at this conference. Producing new knowledge means being research active and contributing to the production and dissemination of new knowledge. Utilizing new knowledge refers to graduates being able to apply the knowledge they have acquired to solve problems in their domain of expertise.

To achieve these aims, successful universities challenge their students to realise high quality learning processes. Traditional didactic lecturing methods have their limitations in this respect. In these traditional approaches to teaching, lecturers typically transfer knowledge to the students, explain the subject matter, determine what study material the students should study, and test the extent to which the students have mastered the prescribed subject matter. These ways of teaching stimulate students to adopt reproductive approaches to learning (Trigwell & Prosser, 2004). Instead, we need approaches to teaching that foster high quality learning processes, which are characterised by active, deep, engaged, self-regulated and collaborative student learning experiences.

- *Active vs passive Learning*: students are actively creating their own knowledge instead of passively absorbing the knowledge of others to be able to reproduce these on a test;
- *Deep vs surface Learning*: students are thinking about relations between theories, concepts, phenomena, theory and practice, they try to structure separate elements of the subject matter into a whole, analyse complex material in detail, critically engage with the literature, instead of trying to memorise and rehearse the most important parts to be able to reproduce these on an exam;
- *Engaged vs instrumentally motivated*: students are intrinsically motivated, personally interested, eager to know, instead of extrinsically motivated, certificate oriented, having to know;
- *Self-regulated vs externally regulated Learning*: students steer their own learning, are self-determined, read 'around' the prescribed material, versus let their learning be regulated by external sources, follow the teachers' directions, study mainly what the teachers find important;

- *Collaborative vs individual Learning*: students work together, share ideas, discuss viewpoints, view fellow students as collaborators they can learn from, versus learn only individually, work alone, digest the study material on their own, view other students as competitors.

Research on student learning in higher education has shown that students do not automatically engage in high quality learning. In a series of studies with university students, Vermunt and Vermetten (2004) found four patterns in student learning: meaning directed learning, application directed learning, reproduction directed learning, and undirected learning. Only the first two patterns can be regarded as representing high quality learning. For a more elaborate discussion of patterns in student learning see the recently published book 'Learning patterns in higher education' (Gijbels, Donche, Richardson & Vermunt, 2014).

Nowadays at many successful universities in the world approaches to teaching are being developed aimed at fostering this kind of high quality learning. Examples of these innovative approaches are assignment-based, problem-based, and research-based university teaching (see for a more elaborate discussion Baeten, Kyndt, Struyven & Dochy, 2010). In *assignment-based teaching*, guided self-study is the main learning concept. Compared to traditional teaching, there are less lectures, more assignments for self-study and more hours spent working in small groups. Students work independently on assignments made and set by the staff. Usually, students are provided with detailed guidelines as to how to do the assignments. In *problem-based learning*, students work in small groups (10-15 students) to understand, explain and solve problems derived from professional practice. The problem-based way of working is systematically structured generally into seven steps, the 'seven-jump': (1) clarifying terms and concepts not readily understood; (2) defining the problem; (3) analysing the problem; (4) summarising the various explanations of the problem into a coherent model; (5) formulating learning objectives; (6) individual study activities outside the group; and (7) report and synthesise the newly acquired information. A staff member (the tutor) guides the learning and collaborative process in the group, but does not explain the subject matter. In *research-based or project-based learning*, students work in smaller groups (2-5 students) and acquire their knowledge through research activities and projects, supervised by a staff member. Students write a research proposal in which the research problem, goals, activities, resources to be used, the projects outcomes aimed at, and the way of supervision are described. This proposal is discussed with the supervisors, and based on their comments students revise the proposal before starting their actual work. Further supervision is often tailor-made (Vermunt, 2007).

These innovations in university teaching have profound implications for teachers, curriculum design and staff development. Teachers need to develop new teaching expertise. For example, in more *traditional teaching* teachers should mainly be able to explain the subject matter well, to regulate their students' learning and to motivate them to learn. However, in *assignment based teaching*, skills like designing challenging assignments, giving educative feedback, coaching students, and getting and maintaining students to work are important for successful teaching. In *problem based learning*, teachers fulfil quite different roles such as tutor, skills trainer and assessor, problem designer, and block coordinator. *Research-based learning* assumes that teachers can supervise project groups, coach the cooperation within groups and deal with free rider behaviour of students. In all these student-centred approaches to teaching teachers must be able to fulfil roles like diagnostician, challenger, model, activator, monitor, reflector and evaluator of students' learning processes.

There are some important implications for curriculum design as well. The curriculum should be designed in such a way that it prepares students for lifelong, self-regulated, collaborative and work-based learning. Moreover, it should consistently foster high quality student learning. The teaching methods should change in response to students' increasing metacognitive and

self-regulatory skills, and the complexity of the problems dealt with should increase gradually and systematically.

Finally, there are important implications for staff development from this perspective of teaching and student learning on what makes a university successful. First, there is the need for an explicit staff development programme to enable staff members to fulfil a variety of pedagogical roles that match the chosen approach to teaching, increasing in complexity (e.g. from tutor to course manager). Embedded in this programme should be a set of qualifications that describe different levels of expertise in university teaching (e.g. basic teaching qualification and senior teaching qualification). This programme and its qualifications should play an important role in periodic staff reviews and staff promotion policy, next to research achievement indicators.

### References

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